

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application.

**COMPLETE LISTING OF CLAIMS:**

Claims 1-14 : (Canceled)

Claim 15 : (New) A method of performing dispersion compensation on an optical communications signal, comprising the steps of:

- a) coarsely dispersion compensating the signal as an optical multiplex on a communications network;
- b) dropping the signal from the network to produce a dropped signal; and
- c) applying an adjustable dispersion compensation to the dropped signal based on a measure of error rate in the signal.

Claim 16 : (New) The method according to claim 15, wherein the step of applying the dispersion compensation is performed by applying the dispersion compensation to individual channels of the signal multiplex dropped from the network.

Claim 17 : (New) The method according to claim 15, and using the measure of the signal error rate to form a feedback signal to control the adjustable dispersion compensation.

Claim 18 : (New) The method according to claim 15, wherein the step of applying the dispersion compensation based on the measure of the error rate is performed by adjusting the dispersion compensation to minimize the error rate.

Claim 19 : (New) The method according to claim 15, and forward error correction (FEC) encoding the optical communications signal, and deriving the measure of the error rate as a bit error rate from an FEC decoder.

Claim 20 : (New) The method according to claim 18, and the step of dithering the dispersion compensation to determine the dispersion compensation having a minimum error rate.

Claim 21 : (New) A method of performing dispersion compensation on an optical communications signal dropped from an optical communications network, comprising the steps of:

- a) splitting a signal multiplex dropped from the network into a plurality of separate signal channels; and
- b) performing an adjustable dispersion compensation on each channel based on a measure of error rate in the respective channel.

Claim 22 : (New) An apparatus for performing dispersion compensation on an optical communications signal, comprising:

- a) means for performing coarse dispersion compensation on a signal multiplex on a communications network;
- b) means for dropping the signal multiplex from the network to produce a dropped signal; and
- c) means for applying an adjustable dispersion compensation to the dropped signal based on a measure of error rate in the signal.

Claim 23 : (New) The apparatus according to claim 22, comprising means for splitting the dropped signal multiplex into a plurality of separate channels, wherein the adjustable dispersion compensation means applies an adjustable compensation to the separate channels.

Claim 24 : (New) The apparatus according to claim 23, comprising means for measuring the error rate in a respective channel to obtain a measured error rate, and means for

deriving and applying a control signal to adjust the dispersion compensation means from the measured error rate.

Claim 25 : (New) The apparatus according to claim 24, wherein the means for deriving and applying the control signal adjusts the dispersion compensation means to minimize the measured error rate.

Claim 26 : (New) The apparatus according to claim 24, wherein the signal carried on the network is forward error corrected (FEC), and wherein the means for measuring the error rate comprises an FEC decoder for outputting a bit error rate signal to the means for deriving and applying the control signal.

Claim 27 : (New) The apparatus according to claim 24, wherein the means for deriving and applying the control signal comprises means for dithering the control signal to set the dispersion compensation means such that the measured error rate is a minimum.

Claim 28 : (New) An add/drop node for an optical communications network, comprising:

- a) a splitter for dropping a signal multiplex from the network;
- b) means for separating the signal multiplex into a plurality of channels;
- c) means for measuring error rate in a respective channel; and
- d) means for applying an adjustable dispersion compensation to the respective channel based on the error rate measured by the measuring means.